U.S. DEPARTMENT OF ENERGY

2011 Congressional Nuclear Cleanup Caucus

Idaho Cleanup Project

April 6, 2011

James R. Cooper
Assistant Manager for Environmental Management
Idaho Operations Office

Jeffrey D. Mousseau, Bechtel BWXT Idaho
Thomas J. Dieter, *CH2M-WG Idaho*

Components of DOE's Idaho Site

- **890 square miles**
- **Cleanup workforce of ~2,400**
- **Originally established in 1949 as a national reactor testing station; 52 "first-of-a-kind" reactors were constructed at the site**
- **Idaho Cleanup Project focuses on six major geographic areas**
  - Idaho Nuclear Technology and Engineering Center (INTEC)
  - Radioactive Waste Management Complex (RWMC)
  - Advanced Reactor Technology Complex
  - ✓ Test Area North (TAN)- **cleanup completed**
  - ✓ Power Burst Facility (PBF)- **cleanup completed**
  - Materials and Fuels Complex (MFC)

Original Facility Missions

- **Idaho Nuclear Technology and Engineering Center** – established in 1950s to remove usable fuel (uranium) from used spent nuclear fuel to fuel government reactors and to store unusable spent nuclear fuel
- **Radioactive Waste Management Complex** – used since 1950s to manage, store, and dispose of waste contaminated with radioactive elements generated in national defense and energy programs, such as transuranic waste* from Rocky Flats, Colorado
- **Advanced Reactor Technology Complex**– established in the 1950s
  - Materials Test Reactor and Engineering Test Reactor (now closed) - studied neutron irradiation effects on materials, fuels and equipment
  - Advanced Test Reactor (operating) - neutron irradiation studies on fuels & materials
- **Test Area North** – established in the 1950s to support the Nation's commercial nuclear industry research, from nuclear powered jet engines to operation of reactors that simulated accidents
- **Power Burst Facility** – established in the 1960s to conduct experiments that helped determine safe operating limits for the commercial nuclear industry
- **Materials and Fuels Complex-** established in the 1950s to focus on research and development of nuclear fuels. Location of the Experimental Breeder Reactor-II

•Transuranic Waste – waste contaminated with elements heavier than uranium.

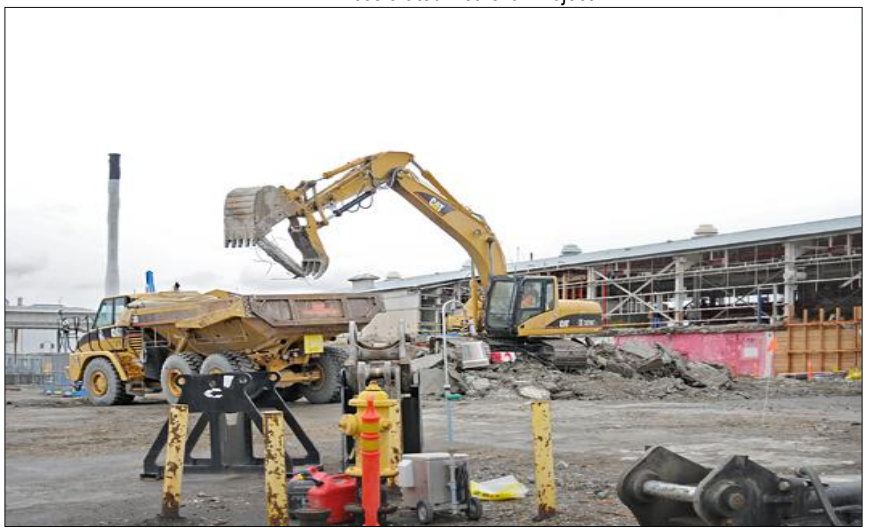
The EM Mission & Idaho's Priorities

" To complete the safe cleanup of the environmental legacy brought about from five decades of nuclear weapons development and government-sponsored nuclear energy research. "

Ongoing retrieval enclosure construction at the Accelerated Retrieval Project

Idaho's Priorities

- Maintain a safe, secure, and compliant posture in the EM complex
- Disposition remote and contact handled transuranic waste
- Complete radioactive tank waste stabilization, treatment, and disposal
- Complete excess facility deactivation and decommissioning
- Continue soil and groundwater remediation
- Continue safe fuel storage
- Complete major portion of EM cleanup work by 2015


Debris from an excess facility is loaded in to a dump truck at the Idaho Nuclear Technology and Engineering Center

American Recovery & Reinvestment Act Accomplishments in Idaho

- The Idaho Site received $468M of EM Recovery Act funding
- Over $337M spent to date
- The Idaho Site met all 2010 Recovery Act milestones
- Awarded $46M in Recovery Act prime and subcontracts to small businesses
- Retrieved and packaged 1.07 acres of buried targeted waste
- Continued RH-TRU waste processing
- Completed the D&D of over 464,500 square feet of facilities and structures

The Idaho Site is on track to meet or exceed all Recovery Act milestones by the end of 2011

Working Towards 2012

- Complete readiness testing of the Sodium Bearing Waste Treatment Facility.
- Continue shipping stored contact-handled and remote-handled transuranic waste to the Waste Isolation Pilot Plant.
- Continue processing transuranic waste from other sites at the Advanced Mixed Waste Treatment Project as part of the Offsite TRU Campaign.
- Continue to receive domestic and foreign research reactor spent nuclear fuel for placement in to dry storage.
- Technology Development and Deployment Program funding will be utilized to support maturation of the Hot Isostatic Press technology in support of calcine disposition.
- Complete processing of approximately 900,000 gallons of highly-radioactive liquid tank waste by 12/31/2012.
- Complete Pit 9 targeted buried waste excavation by the end of 2012.

Funding at the Idaho Site (in thousands)

	FY 2010 Enacted	FY 2012 Request
Environmental Cleanup	469,168	392,000

An offsite shipment of TRU waste from the General Electric Vallecitos Nuclear Center, located near San Francisco, CA is unloaded at the Advanced Mixed Waste Treatment Project

A mixed-low-level-waste shipment leaves the Idaho Site

Idaho's 2015 Clean-up Vision

Staging EM's Legacy Cleanup Exit from Idaho: **Building on the Recovery Act momentum, the Idaho team will:**

✓**Protect the Snake River Plain aquifer**

- Disposition all targeted buried waste in the subsurface disposal area 9 years ahead of schedule
- Construct and operate the Sodium Bearing Waste (SBW) facility by 2012
- Close the last 4 of 15 highly radioactive liquid waste tanks by 2014 and cap Tank Farm area

✓**Reduce Idaho's EM footprint from 775 acres to 62 acres – a decrease of 92%**

- Deactivate and demolish over 240 facilities/structures
- Transition stewardship of mission critical facilities

✓**Disposition all TRU waste**

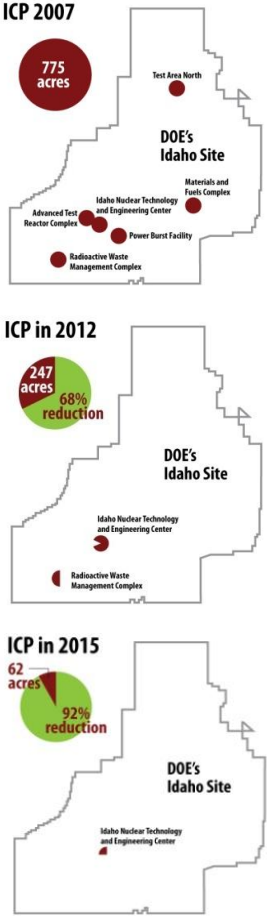
- Complete treatment and shipping of 65,000 meters^3 of stored CH TRU waste out of Idaho 4 years ahead of the Idaho Settlement Agreement requirement
- Ship all RH TRU waste out of the state 4 years ahead of the Idaho Settlement Agreement requirement
- Optimize WIPP operations

✓**Complete all of Idaho's EM legacy cleanup missions**

- Continue advancing calcine disposition activities by utilizing TD&D funds

Footprint Reduction

The 2015 investment strategy for Idaho would result in a cumulative footprint reduction of 713 acres – 92 percent of EM's total liability.



Idaho is a Sound Investment

- ✓ Overall alignment and excellent rapport with Regulators on Idaho's cleanup vision and strategy, general support from Tribal Nations, and stakeholders.
- ✓ Idaho has proven that substantial cleanup progress can be achieved within cost and ahead of schedule.
- ✓ By 2015, Idaho can be the next large site that completes its EM legacy cleanup mission.

Top: Stored waste is retrieved at the Advanced Mixed Waste Treatment Project . Bottom: The Materials Test Reactor core is off loaded at the Idaho CERCLA Disposal Facility.

U.S. DEPARTMENT OF ENERGY





2011 Congressional Nuclear Cleanup Caucus

Advanced Mixed Waste Treatment Project

April 6, 2011

Jeffrey D. Mousseau, PE, PMP
President and General Manager
Bechtel BWXT Idaho

AMWTP Scope of Work

Bechtel BWXT Idaho manages and operates the Advanced Mixed Waste Treatment Project for the U.S. Department of Energy at the Department's Idaho Operations site.

A Hanford Site transuranic waste shipment treated at AMWTP, starts a 1,200 mile one-way trip to the Waste Isolation Pilot Plant.

Workers at AMWTP focus on the safe and compliant retrieval, characterization, treatment and shipment of 65,000 m^3 of legacy stored contact handled transuranic contaminated waste for permanent disposal at sites outside of Idaho and to support the receipt and processing of transuranic waste from other DOE sites for shipment to the Department's Waste Isolation Pilot Plant (WIPP).

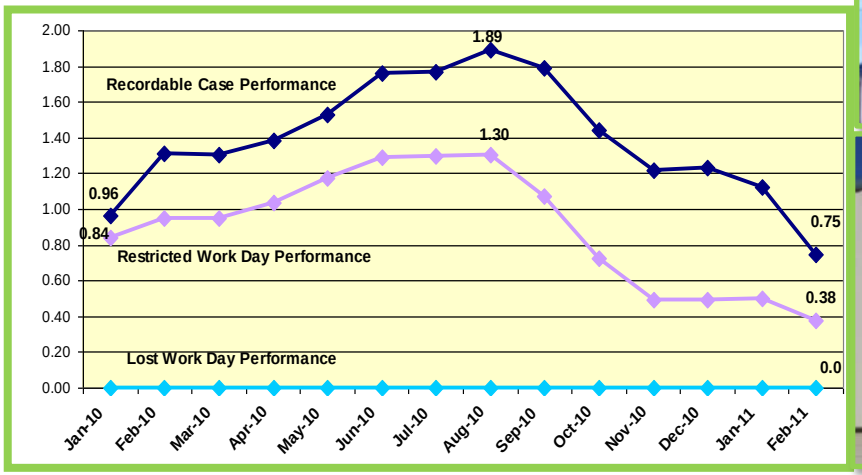
Safety Is An AMWTP Core Value

AMWTP is a Voluntary Protection Program Star Site

Remarkable Safety Performance

- Currently six consecutive months without an OSHA recordable injury
- VPP Star Site and validated Integrated Safety Management System
- Employee-based safety programs
- 2011 Safety Improvement Plan
- Institute of Nuclear Power Operations Human Performance model

The VPP Star Site Flag flies high at AMWTP



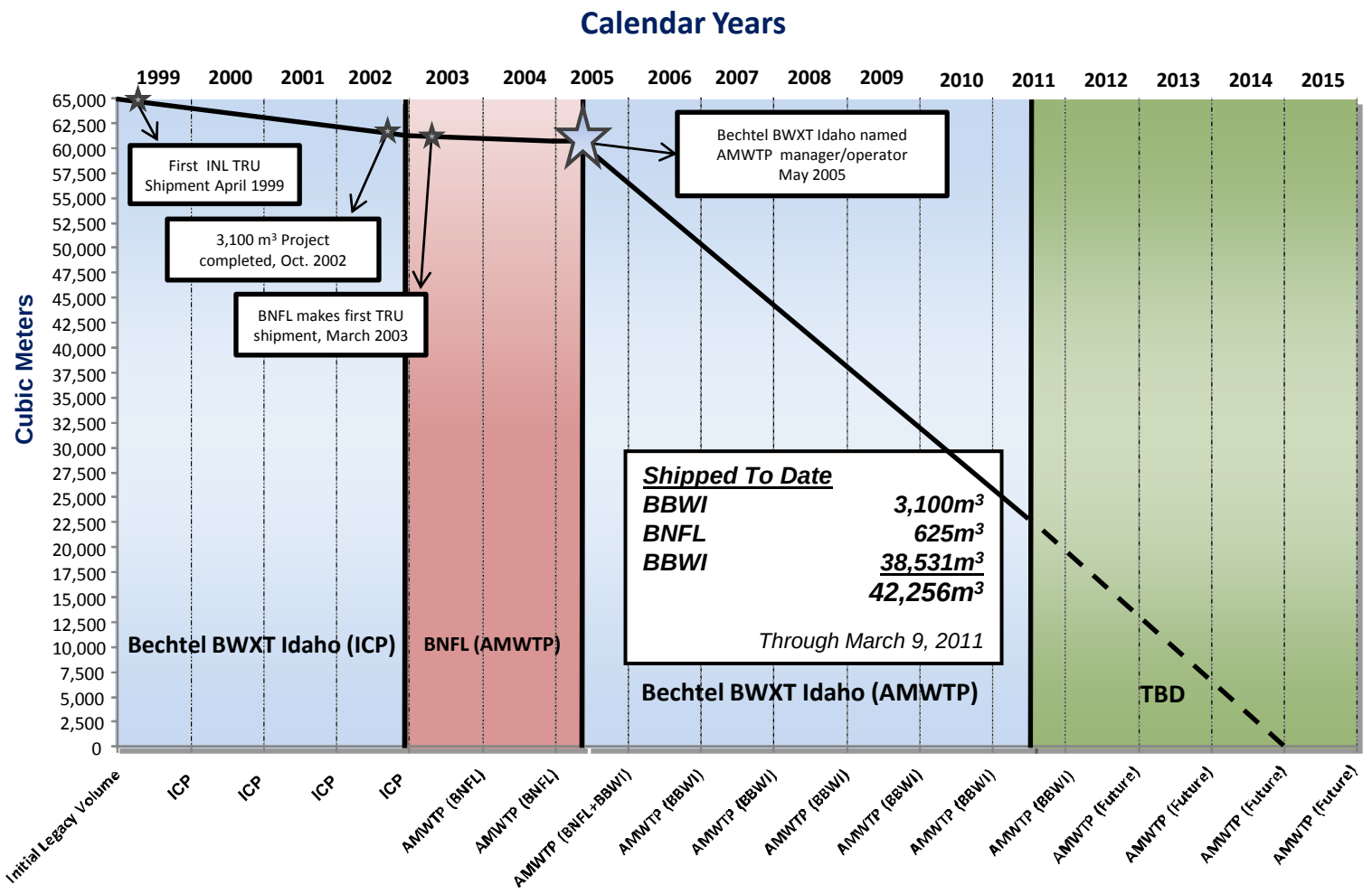
AMWTP safety improvements pay dividends

Safety, always!

Environmental Management

AMWTP Unsurpassed In Production

Consistent Progress In TRU Waste Workoff

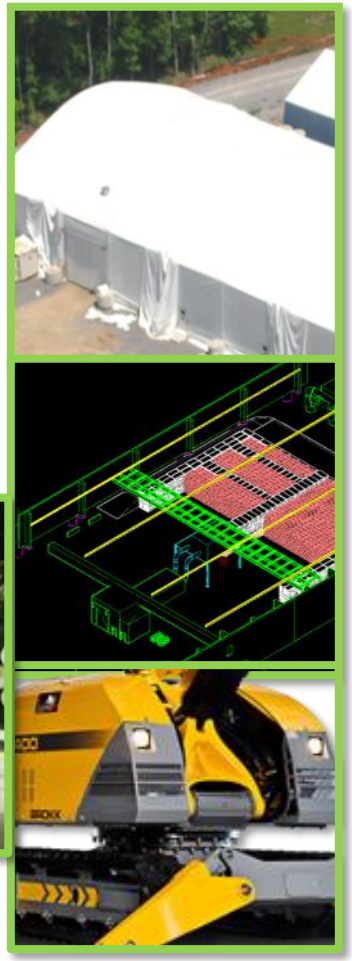


Technology Improvements

Accelerating Production And Expediting Completion

Retrieval Enclosure

- Constructing 47,000 sq.ft. enclosure with controlled air flow and filtered exhaust stack
- Remote controlled Brokk 400 with customized attachments for retrieval enables safe retrieval of degraded containers



Onsite Macroencapsulation

- Uses standard cargo container with stainless steel liner that is welded at closure
- Proven process with waste currently being disposed at the Nevada National Security Site
- 60% less than offsite treatment

Empty, loaded, and sealed cargo containers

Technology Improvements

Accelerating Production And Expediting Completion

Sludge Treatment

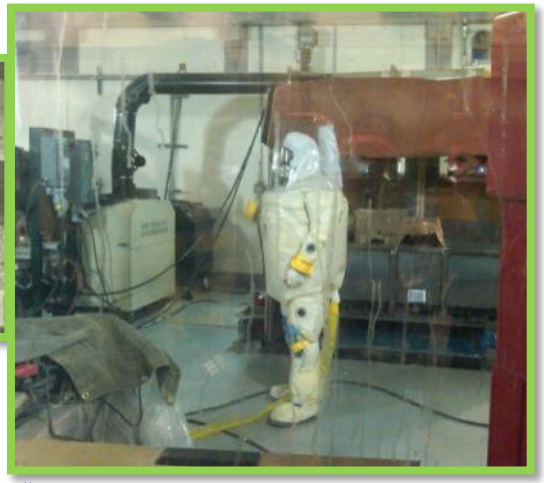
- Uses existing capabilities to process ~850 m³ of organic sludge waste
- Provides solution to disposal of PCB contaminated sludge waste
- Expedites sludge treatment by one year

Sludge treatment process testing

Plasma Torch

- Proven technology for size reducing large waste items.
- New equipment allows for easy movement of items, reducing risk of injury from handling heavy, sharp objects.
- Reduced sized items can be compacted and disposed in WIPP saving funds, space, and time.

Large pipe in boxline, a prime candidate for plasma torch treatment



"Live" plasma testing and employee in Level B protective suit

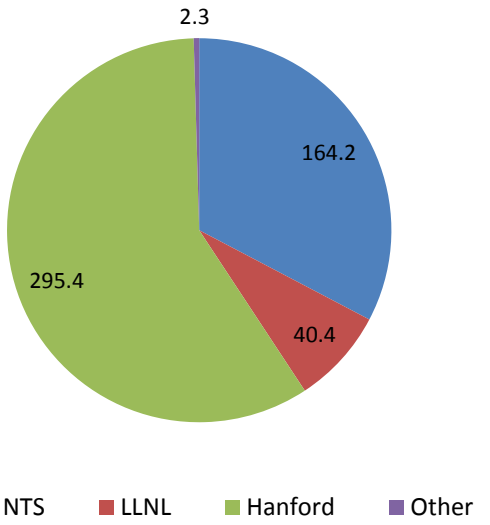
AMWTP Cost and Schedule Achievements

Schedule and Small Business

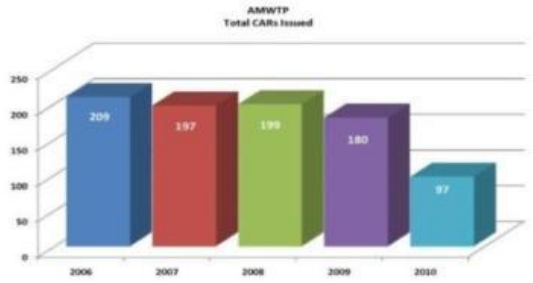
- Three years ahead of Idaho Settlement Agreement shipping schedule
- 81% of discretionary subcontract funds awarded to small business

Compliance and Quality

- Four successive years of passing Waste Isolation Pilot Plant and Nevada National Security Site audits
- More than 3,700 safe and compliant transuranic waste shipments since May 2005
- Receipt, validation, treatment and shipment of 500 m^3 of off-site waste
- Significantly reduced the number of Corrective Action Reports that identified issues and how the issue was corrected



Offsite Waste Characterized/Treated m^3



Quality measure: fewer Corrective Action Reports

AMWTP Cost and Schedule Achievements

Improved Operations

- Continuous process improvements resulted in savings of nearly $11.4M in 2010
- AMWTP 2010 operations reduced the waste volume by 2,053 m³, or 9,870 55-gallon drums, eliminating 360 shipments to WIPP, while saving more than 200,000 gallons of fuel

Recovery Act

- Completed all Recovery Act work ahead of schedule
- Funded jobs for 52 new employees and integrated into workforce

Brandon Blackmon, former Recovery Act funded, now full-time AMWTP employee

Recovery Act funded retrieval crew

AMWTP: Meeting The Public's Interest

- Safe site for employees where work protects Idaho's environment
- Providing value to taxpayers with lowest waste processing costs
- DOE's regional resource for transuranic waste treatment
- Key project in meeting the DOE-EM Journey to Excellence for transuranic waste disposition

First shipment of treated Hanford off-site waste leaves AMWTP for WIPP on Sept. 23, 2010

U.S. DEPARTMENT OF ENERGY

2011 Congressional Nuclear Cleanup Caucus

CWI's progress on the Idaho Cleanup Project

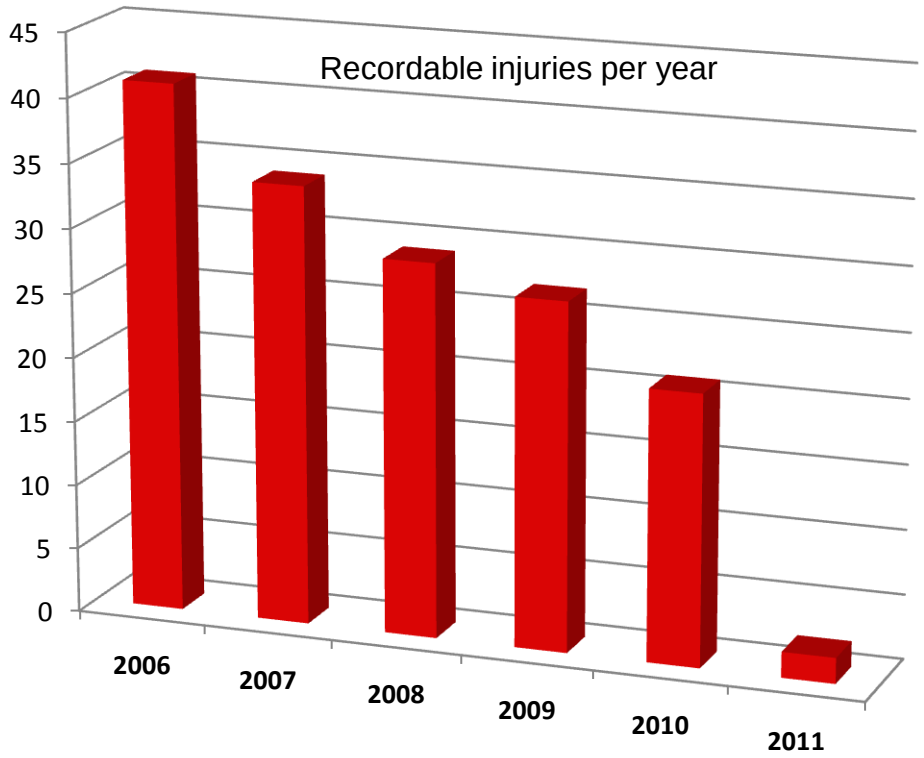
April 6, 2011

Tom Dieter

President and Chief Executive Officer

CH2M-WG Idaho, LLC (CWI)

Worker safety comes first



- CWI achieved 20% reduction in recordable injuries in 2010
- On track to reach 25% reduction in recordable injuries for 2011

EM Environmental Management

Recognized safety leadership

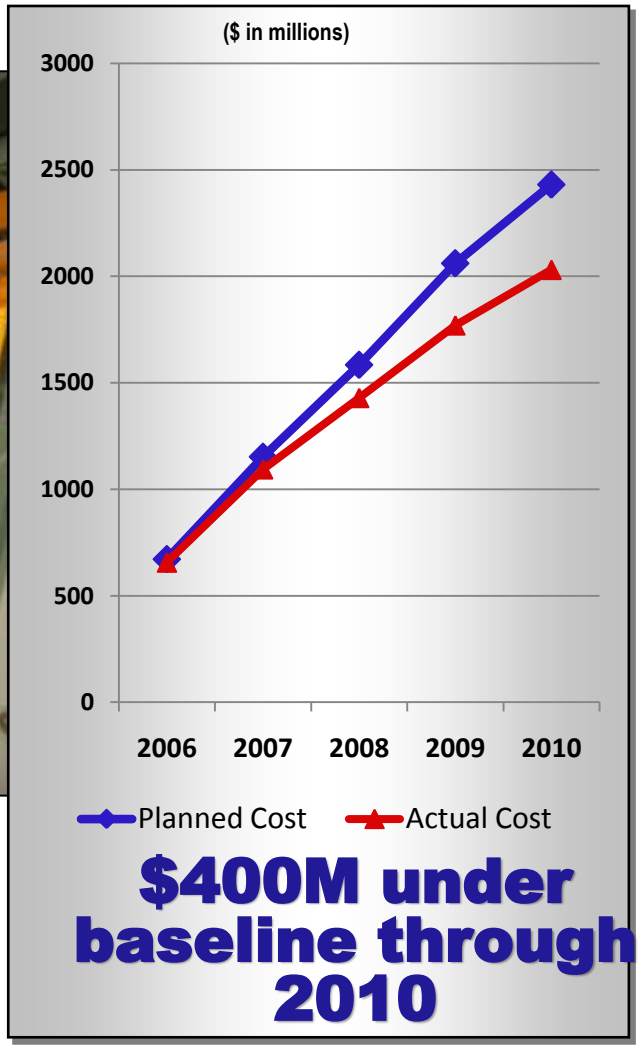
- CWI achieved ‘Legacy of Stars’ designation for maintaining Star status in DOE’s Voluntary Protection program for three years in a row.

- DOE VPP Assessment Report:

  “Employee involvement is undoubtedly the primary strength of the CWI Safety program.”

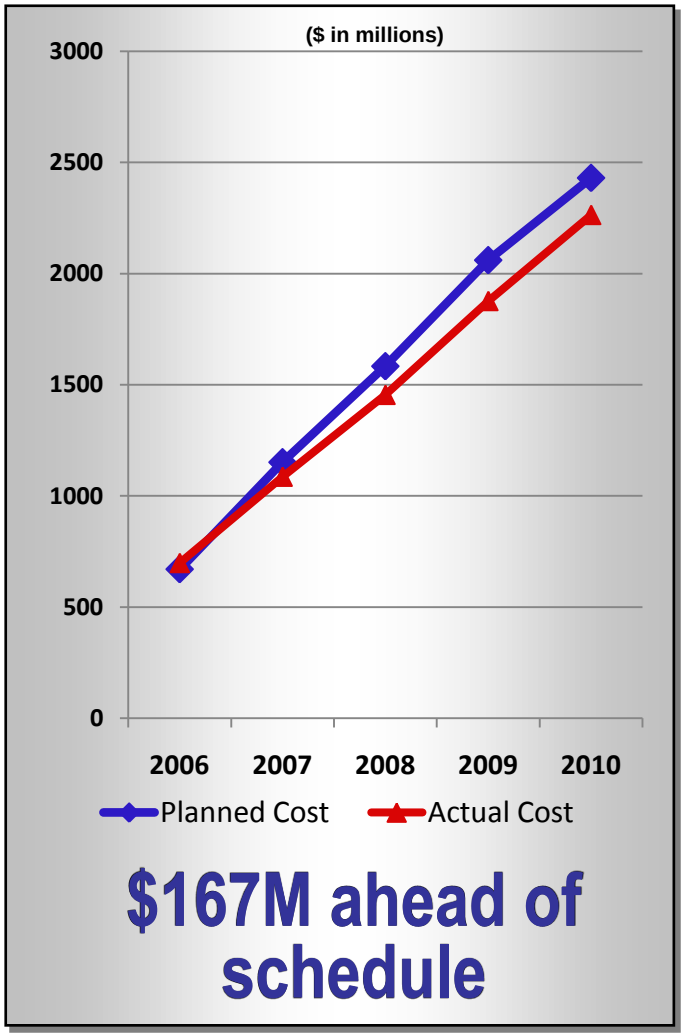
Return on taxpayer investment

CWI completed its 216th and final target remote-handled transuranic shipment to WIPP on March 10, 2011.

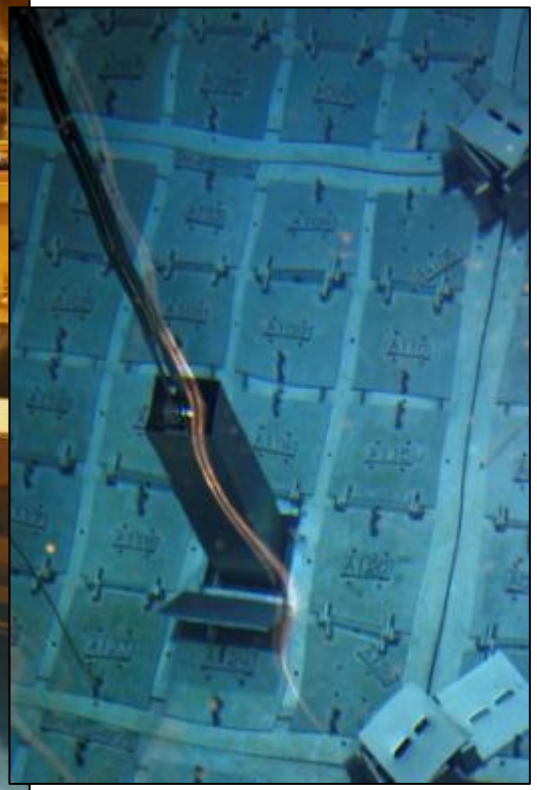


$400M under baseline through 2010

Getting work done early enables reinvestment of savings

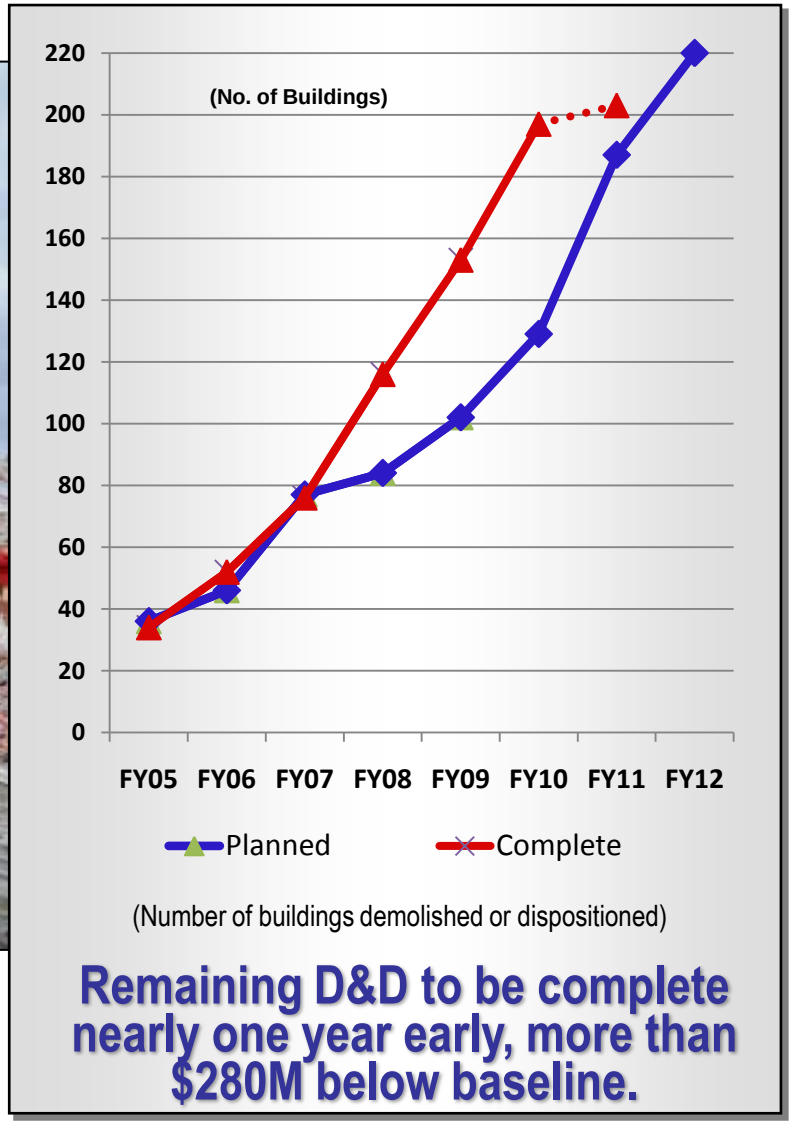


$167M ahead of schedule



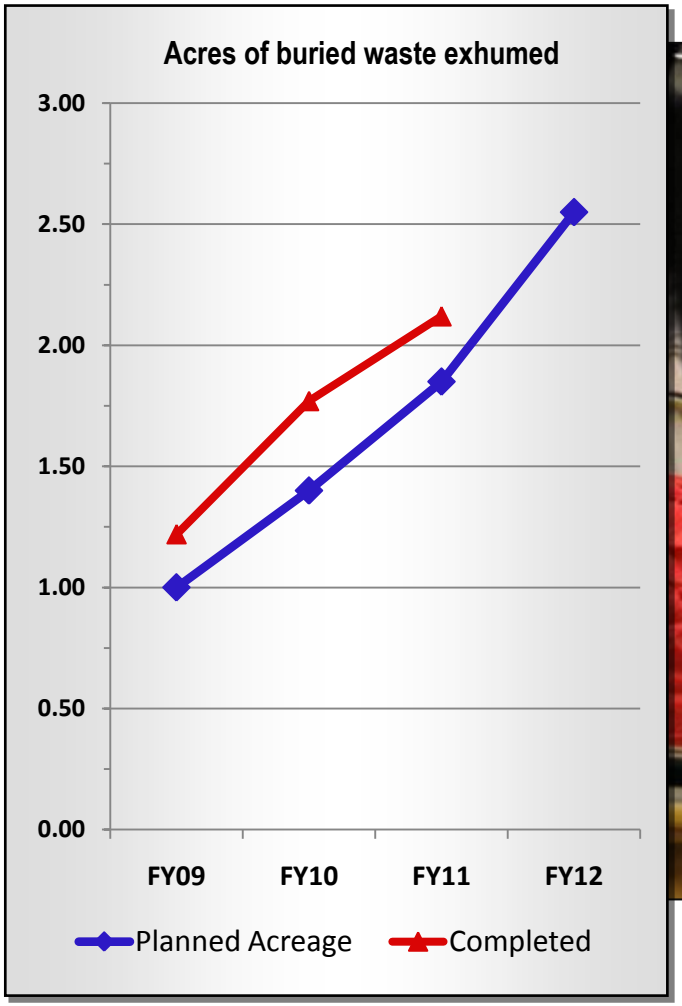
Completing the EM spent fuel wet-to-dry storage campaign contributes to CWI's overall schedule performance.

Unmatched D&D performance



Remaining D&D to be complete nearly one year early, more than $280M below baseline.

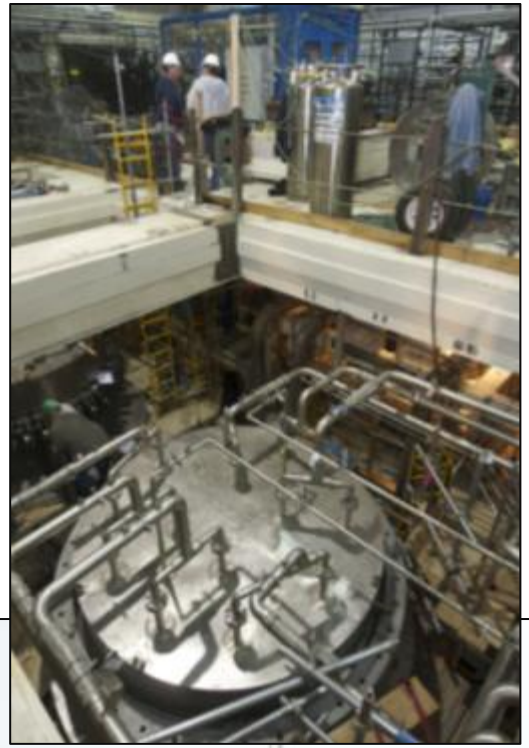
Ahead of schedule on buried waste



CWI workers sort and repackage Pit 9 waste for shipment to WIPP.

EM Environmental Management

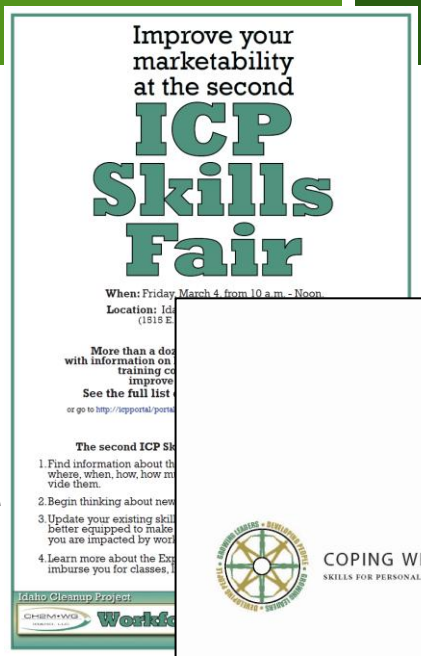
Sodium-Bearing Waste Treatment Facility



Construction is 95% complete on the facility which will treat the last liquid waste in the INTEC Tank Farm to meet DOE commitments to the State of Idaho and help protect the Snake River Plain Aquifer.

Benefits and other tools help workers transition to new opportunities

- ~1,800 workers currently employed by the Idaho Cleanup Project
- ~600 workers impacted by workforce restructuring as base and Recovery Act projects are completed
- Transition support
  - Transition center, customized workshops, and dedicated website to provide support services such as resume development, interview skills training, and job search techniques



Leadership leads to success

- Employee-owned safety culture (24/7)
- Cost and schedule performance excellence on Recovery Act funded projects
- Reducing risks to the Snake River Plain Aquifer and helping DOE meet its obligations
- Delivering what we promised and more
- Partnership with stakeholders and regulators

CWI's leadership provides an outstanding return on taxpayer investment for Environmental Management and Idaho